REMARKS

This is a full and timely response to the final Office Action mailed by the U.S. Patent and Trademark Office on December 24, 2008. Claims 1-24 remain pending in the present application. Claims 1, 9 and 17 are amended. Support for the amendments to claims 1, 9 and 17 can be found in the specification, at least in paragraphs 0035, 0036, 0037, 0046 and 0048, and in FIGS. 3, 4, 6A and 6B. No new matter is introduced. In view of the foregoing amendments and following remarks, reconsideration and allowance of the present application and claims are respectfully requested.

Rejections Under 35 U.S.C. § 103

<u>Claims 1, 2, 9, 10, 17 and 18</u>

Claims 1, 2, 9, 10, 17 and 18 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,999,529 to Bernstein *et al.* (hereafter *Bernstein*) in view of U.S. Patent Application Publication No. 2003/0088685 to Lee *et al.* (hereafter *Lee*) and further in view of U.S. Patent No. 5,761,191 to VanDervort *et al.* (hereafter *VanDevort*). For a claim to be properly rejected under 35 U.S.C. § 103, "[t]he PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988) (Citations omitted). Further, for a proper rejection under 35 U.S.C. § 103(a), a combination of references must expressly or impliedly suggest all of the features of the claimed invention, *i.e.*, all of the features cited in the claims at issue. *In re Gorman*, 933 F.2d 982, 18 USPQ 1885 (Fed. Cir. 1991). Hindsight reconstruction is impermissible. *See, e.g., Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 19 USPQ2d 1111 (Fed. Cir. 1991). Further, "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260, 1266, 23 U.S.P.Q.2d 1780 (Fed Cir. 1992).

Bernstein appears to disclose a system that combines aspects of time division multiplexing (TDM) and asynchronous transfer mode (ATM) to produce a voice-over-ATM

(VoA) internetworking solution. See *Bernstein*, col. 1, lines 56-60. The system disclosed by *Bernstein* appears to process the TDM data and the ATM data in parallel in that a number of modules 230 process at least one type of VoA AAL. Internetworking occurs when a VoA processing module 230 receives a specific VoA AAL. See *Bernstein*, col. 2, lines 61-65.

As shown in FIG. 2, the parallel processing disclosed by *Bernstein* appears to allow a specific VoA AAL to use a TDM bus in a TDM slot reserved for a different VoA processing module. Specifically, *Bernstein* states

> Internetworking occurs when a VoA processing module 230 receives a specific VoA AAL. That module processes the information, places the resulting bytes into a TDM1 stream onto TDM bus 260 using the slots reserved for that VoA module, and sends those bytes to TSI 240. TSI 240 then places these bytes onto TDM bus 270 in slots reserved for a different VoA processing module 230. Module 230 takes the byte stream from bus 270, formats the bytes into a cell with a different VoA AAL, and sends the newly-created cell via busses 237 and 239 to ATM Egress circuitry 220 for transmission out of device 200 to ATM network 205.

See *Bernstein*, col. 2, line 65 to col. 3, line 9.

From this it is abundantly clear that *Bernstein* merely converts a specific VoA AAL for use on a TDM channel. Indeed, *Bernstein* fails to mention any segmentation and reassembly of AAL2 and AAL5 ATM data.

Lee appears to disclose a system capable of converting AAL2 data to AAL 5 data, while separating real-time and near real-time data; and converting AAL5 data to AAL2 data, while separating real-time and near real-time data to improve throughput under non-optimal network conditions.

The Office Action admits that "Bernstein and Lee do not explicitly teach a content addressable memory configured to receive any one of the VPI, VCI and CID information related to each ATM cell and configured to provide an index when particular VPI, VCI and CID information is identified, the index placed in the circular buffer and used to determine an AAL mode for each ATM cell." The Office Action then relies on *VanDervort* to remedy the deficiency of *Bernstein* and *Lee*. The Office Action states that

> However, the above-mentioned claimed limitation is well known in the art, as evidenced by VanDervort. In particular, VanDervort teaches a content addressable memory configured to receive any one of the VPI, VCI and CID information related to each ATM cell and configured to provide an index when particular VPI, VCI and CID information is identified, the index placed in the circular buffer and used to determine an AAL mode for each

ATM cell (see column 13, lines 50-63 and column 14, lines 23-30, CAM holds ATM cell data and is indexed, and CAM also keeps track of information regarding cells such as AAL mode).

In view of the above, having the system of Bernstein and Lee, then given the well-established teaching of VanDervort, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the system of Bernstein and Lee as taught by VanDervort, since VanDervort stated in column 6, lines 25-37 that measuring and collecting aggregate network utilization data is used to determine ways of improving the performance of the high speed ATM networks.

See Office Action, pages 3-4.

VanDervort discloses an instrument for identifying the types of individual cells in a stream of ATM cells by individually examining the cell header and cell payload information of each cell. See *VanDervort*, Abstract. *VanDervort* also discloses a content addressable memory (CAM) element that is used to classify and route ATM cells based solely on the VPI and the VCI of each cell. See *VanDervort*, col. 14, lines 9-20. Specifically, *VanDervort* states

Each received cell is stored in a first in-first out (FIFO) buffer memory 116 in preparation for cell filtering by a content-addressable memory (CAM) 114. The CAM 114 effectively filters the cells in order to identify those of particular interest. As discussed above, cell identification and filtering are performed by supplying a portion of each cell (in a preferred embodiment, including the VPI and VCI, the payload type identifier and cell loss priority bits, and part of the cell payload) to the comparand, i.e., address, register of the CAM 114. Cell identifying information, again at least the VPI and VCI of cells belonging to virtual connections of interest, is stored in CAM 114, typically responsive to user input from user interface 62 (FIG. 6), provided to the CAM via embedded processor controller 124, as indicated at 125.

Nowhere does *VanDervort* disclose, teach or suggest analyzing an ATM cell to determine the cell's CID. Nor does *VanDervort* disclose, teach or suggest ATM cell reassembly using a content addressable memory, such that AAL2 and AAL5 cells are reassembled in real time.

Indeed, it is the ability of the CAM 324 of the present invention to receive and identify the CID associated with an AAL2 mini-cell (as shown in Applicant's FIG. 2B), that allows the CAM 324 to provide the claimed index that can determine the ATM cell type, and thus facilitate the real-time reassembly of both AAL2 and AAL5 cells.

Applicant respectfully submits that amended independent claim 1 recites at least "a

circular buffer for storing ATM data, the ATM data comprising information divided into ATM cells, the ATM cells comprising at least one of virtual path identifier (VPI) information, virtual channel identifier (VCI) information and channel identifier (CID) information," and "a content addressable memory configured to receive any of the VPI, VCI and CID information related to each ATM cell and configured to provide an index when particular VPI, VCI and CID information is identified, *the index corresponding to unique VPI/VCI and VPI/VCI+CID combination*s, the index placed in the circular buffer and used to determine an AAL mode of each ATM cell." Applicant respectfully submits that at least these features are not disclosed, taught or suggested by the proposed combination.

Applicant has amended independent claim 9 to recite at least "providing ATM data to a circular buffer, the ATM data comprising information divided into ATM cells, the ATM cells comprising at least one of virtual path identifier (VPI) information, virtual channel identifier (VCI) information and channel identifier (CID) information," "receiving in a content addressable memory any of the VPI, VCI and CID information related to each ATM cell," "storing the ATM data in the circular buffer," and providing an index when particular VPI, VCI and CID information is identified, *the index corresponding to unique VPI/VCI and VPI/VCI+CID combinations*, the index placed in the circular buffer and used to determine an AAL mode of each ATM cell." Applicant respectfully submits that at least these steps are not disclosed, taught or suggested by the proposed combination.

Applicant has amended independent claim 17 to recite at least "logic for providing ATM data to a circular buffer, the ATM data comprising information divided into ATM cells, the ATM cells comprising at least one of virtual path identifier (VPI) information, virtual channel identifier (VCI) information and channel identifier (CID) information," "logic for receiving in a content addressable memory any of the VPI, VCI and CID information related to each ATM cell," "logic for storing the ATM data in the circular buffer," and "logic for providing an index when particular VPI, VCI and CID information is identified, *the index corresponding to unique VPI/VCI and VPI/VCI+CID combination*s, the index placed in the circular buffer and used to determine an AAL mode of each ATM cell." Applicant respectfully submits that at least these features are not disclosed, taught or suggested by the proposed combination.

Accordingly, Applicant respectfully submits that independent claims 1, 9 and 17 are

allowable for at least the reason that they recite features that are neither disclosed, taught nor suggested by the proposed combination. Further, Applicant respectfully submits that dependent claim 2, which depends directly from allowable independent claim 1, dependent claim 10, which depends directly from allowable claim 9, and dependent claim 18, which depends directly from allowable independent claim 17, are allowable for at least the reason that they depend from allowable independent claims. *In re Fine,* 837 F.2d 1071, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1998).

Claims 3-8, 11-16 and 19-24

Claims 3-8, 11-16 and 19-24 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Bernstein* in view of *Lee* and *VanDervort,* as applied to claims 2, 10 and 18 above, and further in view of U.S. Patent No. 6,687,250 to Suzuki *et al.* (hereafter *Suzuki*).

Suzuki discloses a device with controllable segmentation and reassembly SAR functionality for enabling segmentation and reassembly of AAL5 cells. See *Suzuki,* Abstract.

However, *Suzuki* fails to cure the deficiencies of *Bernstein, Lee* and *VanDervort* because the proposed combination fails to disclose, teach or suggest at least all elements of amended claims 1, 9 and 17.

Applicant's claim 1 recites at least "a circular buffer for storing ATM data, the ATM data comprising information divided into ATM cells, the ATM cells comprising at least one of virtual path identifier (VPI) information, virtual channel identifier (VCI) information and channel identifier (CID) information," and "a content addressable memory configured to receive any of the VPI, VCI and CID information related to each ATM cell and configured to provide an index when particular VPI, VCI and CID information is identified, *the index corresponding to unique VPI/VCI and VPI/VCI+CID combination*s, the index placed in the circular buffer and used to determine an AAL mode of each ATM cell." Applicant respectfully submits that at least these features are not disclosed, taught or suggested by the proposed combination.

Applicant's amended independent claim 9 recites at least "providing ATM data to a circular buffer, the ATM data comprising information divided into ATM cells, the ATM cells comprising at least one of virtual path identifier (VPI) information, virtual channel identifier

(VCI) information and channel identifier (CID) information," "receiving in a content addressable memory any of the VPI, VCI and CID information related to each ATM cell," "storing the ATM data in the circular buffer," and providing an index when particular VPI, VCI and CID information is identified, *the index corresponding to unique VPI/VCI and VPI/VCI+CID combinations*, the index placed in the circular buffer and used to determine an AAL mode of each ATM cell." Applicant respectfully submits that at least these steps are not disclosed, taught or suggested by the proposed combination.

Applicant's amended independent claim 17 recites at least "logic for providing ATM data to a circular buffer, the ATM data comprising information divided into ATM cells, the ATM cells comprising at least one of virtual path identifier (VPI) information, virtual channel identifier (VCI) information and channel identifier (CID) information," "logic for receiving in a content addressable memory any of the VPI, VCI and CID information related to each ATM cell," "logic for storing the ATM data in the circular buffer," and "logic for providing an index when particular VPI, VCI and CID information is identified, *the index corresponding to unique VPI/VCI and VPI/VCI+CID combination*s, the index placed in the circular buffer and used to determine an AAL mode of each ATM cell." Applicant respectfully submits that at least these features are not disclosed, taught or suggested by the proposed combination.

Neither is there any suggestion or motivation in *Bernstein, Lee, VanDervort* or *Suzuki* to combine the teachings of *Bernstein, Lee, VanDervort* and *Suzuki* to arrive at Applicant's AAL2 and AAL5 reassembly because neither *Bernstein, Lee, VanDervort* nor *Suzuki* mention the identification and reassembly of AAL5 and AAL2 cells using a content addressable memory configured to receive any of the VPI, VCI and CID information related to each ATM cell and configured to provide an index when particular VPI, VCI and CID information is identified, *the index corresponding to unique VPI/VCI and VPI/VCI+CID combinations*, the index placed in the circular buffer and used to determine an AAL mode of each ATM cell.

Accordingly, Applicant respectfully submits that dependent claims 3-8, 11-16 and 19-24 are allowable for at least the reason that they recite features that are neither disclosed, taught nor suggested by the proposed combination. Further, Applicant respectfully submits that dependent claims 3-8, which depend indirectly from allowable independent claim 1,

dependent claims 11-16, which depend indirectly from allowable independent claim 9, and dependent claims 19-24, which depend indirectly from allowable independent claim 17 are allowable for at least the reason that they depend from allowable independent claims. *In re Fine*, supra.

CONCLUSION

For at least the foregoing reasons, Applicant respectfully requests that all outstanding rejections be withdrawn and that all pending claims of this application be allowed to issue. If the Examiner has any comments regarding Applicant's response or intends to dispose of this matter in a manner other than a notice of allowance, Applicant requests that the Examiner telephone Applicant's undersigned attorney.

Respectfully submitted,

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